


This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn): An isolated EER-7 protein having an amino acid sequence comprising at least 10 contiguous amino acids from the sequence depicted in SEQ ID NO:2 or which has at least 60% sequence similarity with SEQ ID NO:2, which EER-7 protein has (i) lysyl oxidase activity; (ii) comprises four copies of a SRCR domain having a sequence greater than 80% similar to a sequence selected from the group consisting of SEQ ID NOs: 3, 4, 5, and 6; and (iii) comprises a conserved catalytic domain of lysyl oxidase enzymes having a sequence as depicted in SEQ ID NO: 7.
2. (Withdrawn): The EER-7 protein of claim 1, wherein the protein has specific binding activity with an anti-EER-7 antibody.
3. (Withdrawn): The EER-7 protein of claim 1 which is a human EER-7 protein.
4. (Withdrawn): The EER-7 protein of claim 3 which has an amino acid sequence as depicted in SEQ ID NO: 2.
5. (Withdrawn): The EER-7 protein of claim 3 which is encoded by a nucleic acid having a sequence as depicted in SEQ ID NO: 1.

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6. (Withdrawn): The EER-7 protein of claim 1 having at least 60% sequence identity to human EER-7 protein having an amino acid sequence as depicted in SEQ ID NO: 2.

7. (Withdrawn): A polypeptide fragment of an EER-7 protein, wherein the fragment has a property selected from the group consisting of:


a) comprising from one to four copies of a SRCR domain having a sequence greater than 80% similar to a sequence selected from the group consisting of SEQ ID Nos: 3, 4, 5, and 6;

b) a conserved catalytic domains of lysyl oxidase enzymes having a sequence as depicted in SEQ ID NO: 7;

c) specific binding activity with an anti-EER-7 antibody; and

d) any combination thereof.

8. (Currently Amended): An isolated nucleic acid encoding an endothelial estrogen regulated gene-7 ~~EER-7~~ protein having an amino acid sequence ~~comprising at least 10 contiguous amino acids from the sequence depicted in SEQ ID NO:2 or~~ which has at least 60% about 75% sequence similarity with SEQ ID NO:2, which endothelial estrogen regulated gene-7 ~~EER-7~~ protein has (i) lysyl oxidase activity; (ii) comprises four copies of a ~~SRCR~~ scavenger receptor cysteine rich domain having a sequence greater than 80% similar to a sequence selected from the group consisting of SEQ ID NOs: 3, 4, 5, and 6; and (iii) comprises a

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conserved catalytic domain of lysyl oxidase enzymes having a sequence as depicted in SEQ ID NO: 7.

9. (Original): The nucleic acid of claim 8 which is a cDNA.

10. (Currently Amended): The nucleic acid of claim 8, wherein the endothelial estrogen regulated gene-7 ~~EER-7~~ protein encoded for is a human endothelial estrogen regulated gene-7 ~~EER-7~~ protein.


11. (Currently Amended): The ~~EER-7~~ protein nucleic acid of claim 10 ~~53~~, wherein the endothelial estrogen regulated gene-7 protein encoded for ~~which~~ has an amino acid sequence as depicted in SEQ ID NO: 2.

12. (Currently Amended): The nucleic acid of claim 8 ~~53~~ which comprises a nucleotide sequence as depicted in SEQ ID NO: 1.

13. (Currently Amended): A vector comprising a nucleic acid encoding a fragment of an endothelial estrogen regulated gene-7 ~~EER-7~~ protein operatively associated with an expression control sequence, wherein the fragment ~~has a property~~ is selected from the group consisting of:

a) a polypeptide having at least about 75% sequence similarity with SEQ ID NO:

2,

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a b) a polypeptide comprising from one to four copies of a ~~SRCR~~ scavenger receptor cysteine rich domain, said scavenger receptor cysteine rich domain having a sequence greater than 80% similar to a sequence selected from the group consisting of SEQ ID Nos ~~NOs~~ 3, 4, 5, and 6;

b c) a polypeptide comprising a conserved catalytic ~~domains~~ domain of lysyl oxidase enzymes having a sequence as depicted in SEQ ID NO: 7; and

e) ~~specific binding activity with an anti-EER-7 antibody; and~~

d) any combination thereof.

14. (Currently Amended): The vector according to claim 13, wherein the fragment of an endothelial estrogen regulated gene-7 ~~EER-7~~ protein is a full length endothelial estrogen regulated gene-7 ~~EER-7~~ protein.

15. (Original): A host cell transfected with the vector of claim 14.

16. (Withdrawn): A non-human animal transformed with the vector of claim 14, wherein the animal expresses an EER-7 protein at a detectable level in response to estrogen.

17. (Currently Amended): A method for producing endothelial estrogen regulated gene-7 ~~EER-7~~ protein, which method comprises isolating endothelial estrogen regulated gene-7 ~~EER-7~~ protein produced by the host cells of claim 15, wherein the host cells have been cultured under

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conditions that provide for expression of the endothelial estrogen regulated gene-7 ~~EER-7~~ protein by the vector.


18. (Currently Amended): An isolated nucleic acid of at least 20 consecutive bases that ~~hybridizes~~ hybridize under stringent conditions with a nucleic acid having a nucleotide sequence as depicted in SEQ ID NO: 1, but that do not hybridize under stringent conditions to nucleic acids encoding other lysyl oxidases, said stringent conditions including 50% formamide, 4XSSC at 42° C.

19. (Original):The nucleic acid of claim 18, wherein at least ten nucleotides are contiguous nucleotides from the nucleic acid sequence as depicted in SEQ ID NO: 1.

20. (Original):The nucleic acid of claim 18 which is detectably labeled.

21. (Withdrawn): An antibody that specifically binds to the EER-7 protein of claim 1.

22. (Withdrawn): A method for detecting an EER-7 protein, which method comprises detecting binding of the antibody of claim 21 to a molecule in a sample suspected of containing an EER-7 protein, wherein the antibody is contacted with the sample under conditions that permit specific binding with any EER-7 protein present in the sample and binding of the antibody to the molecule in the sample indicates the presence of EER-7.

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23. (Withdrawn): A method for detecting expression of EER-7, which method comprises detecting mRNA encoding EER-7 in a sample from a cell suspected of expressing EER-7.

24. (Withdrawn): The method according to claim 23 wherein mRNA encoding EER-7 is detected by hybridization to an EER-7-specific nucleic acid.


25. (Withdrawn): The method according to claim 24 wherein the EER-7-specific nucleic acid is at least 10 nucleotides in length and has a sequence identical to a sequence of the same number of bases in SEQ ID NO: 1, or the complementary sequence thereof.

26. (Withdrawn): An assay system for identifying selective estrogen receptor ligands, comprising transformed cells that express different functional estrogen receptors, wherein the number of cells is sufficient to transcribe a detectable amount of mRNA encoding EER-7.

27. (Withdrawn): The assay system of claim 26, wherein the estrogen receptor is a human estrogen receptor.

28. (Withdrawn): The assay system of claim 26 which is an endothelial cell.

29. (Withdrawn): The assay system of claim 28 which is a human umbilical vein cell.

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30. (Withdrawn): A method for identifying a compound that selectively regulates EER-7 mRNA transcription through an estrogen receptor, which method comprises detecting a difference in the level of EER-7 mRNA in an assay system comprising transformed cells that express different functional estrogen receptors, wherein the number of cells is sufficient to transcribe a detectable amount of mRNA encoding EER-7 contacted with a test compound, wherein a difference in the level of EER-7 mRNA indicates that the test compound selectively regulates the estrogen receptor.

31. (Withdrawn): The method according to claim 30, wherein the test compound is an estrogen or an estrogen analog.

32. (Withdrawn): The method according to claim 31, wherein the test compound is an estrogen receptor selective agonist or antagonist.

33. (Withdrawn): The method according to claim 30, wherein the level of mRNA decreases when contacted with a test compound that regulates expression through the estrogen receptor.

34. (Withdrawn): The method according to claim 30, wherein the level of mRNA increases when contacted with a test compound that regulates expression through the estrogen receptor.

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35. (Withdrawn): The method according to claim 30, wherein the estrogen receptor is a human estrogen receptor.


36. (Withdrawn): The method according to claim 30, wherein the first estrogen receptor is an ER α .

37. (Withdrawn): The method according to claim 36, wherein the second estrogen receptor is an ER β .

38. (Withdrawn): The method according to claim 30, wherein the cell is an endothelial cell.

39. (Withdrawn): The method according to claim 38, wherein the cell is a human umbilical vein cell.

40. (Withdrawn): The polypeptide fragment of claim 7, wherein the four copies of SRCR domains comprise the sequences as depicted in SEQ ID NOS: 3-6.

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41. (Withdrawn): The polypeptide fragment of claim 7, having at least 46% sequence similarity to the catalytic domain of lysyl oxidase enzyme having an amino acid sequence as depicted as SEQ ID NO: 7.

42. (Withdrawn): The assay system of claim 26, wherein the transformed cells comprise two different populations.

43. (Withdrawn): The assay system of claim 42, wherein one population expresses the ER α estrogen receptor.

44. (Withdrawn): The assay system of claim 43, wherein the other population expresses the ER β estrogen receptor.

45. (Withdrawn): A non-human EER-7 knockout animal, wherein endogenous EER-7 expression is suppressed in the animal.

46. (Withdrawn): A non-human animal transformed with a vector comprising a nucleic acid encoding a protein that regulates EER-7 expression, wherein the protein is operatively associated with an expression control sequence; wherein the animal expresses an EER-7 protein at a detectable level in response to estrogen.


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47. (New): The nucleic acid of claim 8, wherein the endothelial estrogen regulated gene-7 protein encoded for comprises four copies of a scavenger receptor cysteine rich domain having a sequence greater than 85% similar to a sequence selected from the group consisting of SEQ ID NOs: 3, 4, 5, and 6.

48. (New): The nucleic acid of claim 8, wherein the endothelial estrogen regulated gene-7 protein encoded for comprises four copies of a scavenger receptor cysteine rich domain having a sequence greater than 90% similar to a sequence selected from the group consisting of SEQ ID NOs: 3, 4, 5, and 6.

49. (New): The nucleic acid of claim 8, wherein the endothelial estrogen regulated gene-7 protein encoded for comprises four copies of a scavenger receptor cysteine rich domain having a sequence greater than 95% similar to a sequence selected from the group consisting of SEQ ID NOs: 3, 4, 5, and 6.

50. (New): The nucleic acid of claim 8, wherein the endothelial estrogen regulated gene-7 protein encoded for comprises four copies of a scavenger receptor cysteine rich domain having a sequence selected from the group consisting of SEQ ID NOs: 3, 4, 5, and 6.

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51. (New): The nucleic acid of claim 8, wherein the endothelial estrogen regulated gene-7 protein encoded for has an amino acid sequence that has at least about 80% sequence similarity with SEQ ID NO: 2.

52. (New): The nucleic acid of claim 8, wherein the endothelial estrogen regulated gene-7 protein encoded for has an amino acid sequence that has at least about 85% sequence similarity with SEQ ID NO: 2.

53. (New): An isolated nucleic acid encoding an endothelial estrogen regulated gene-7 protein having an amino acid sequence which has at least about 90% sequence identity with SEQ ID NO: 2.

54. (New): The isolated nucleic acid of claim 53, wherein the endothelial estrogen regulated gene-7 protein has an amino acid sequence that has at least about 95% sequence identity with SEQ ID NO: 2.

55. (New): The vector of claim 13, wherein the fragment encoded for has specific binding activity with an anti-endothelial estrogen regulated gene-7 antibody.

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